Message

From: Fullagar, Jill [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=7BA061353C314B40A14A8BE1EE382AE3-GABLE, JILL]
Sent: 11/16/2015 10:48:57 PM
To: Jacobson, Martin [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8fafee20580b4afaa071e71ddcc088eb-Jacobson, M]
Subject: RE: Brian, Tanya R10 request for OA help

I trust you. I'll give her a call and see what she says. We've found that in the ocean sampling world, "right off" the coast is widely interpreted.

Jill Fullagar, Impaired Waters Coordinator
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fullagar.jill@epa.gov

From: Jacobson, Martin
Sent: Monday, November 16, 2015 2:47 PM
To: Fullagar, Jill <Fullagar.Jill@epa.gov>
Subject: RE: Brian, Tanya R10 request for OA help

The closest sites were like 6 to 7 miles off the coast. You can check it out my copying and pasting a station's lat/long into google maps (make sure the second number has a " –" sign in front of it (e.g. 48.000 -124.000).

Marty

From: Fullagar, Jill
Sent: Monday, November 16, 2015 2:44 PM
To: Jacobson, Martin
Subject: RE: Brian, Tanya R10 request for OA help

Thanks Marty. All those lat/longs were from a single study, and the author had told me they had collected samples "right off" the OR and WA coasts, so I'm surprised. I'll check in with her to confirm. Thanks so much.

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From: Jacobson, Martin
Sent: Monday, November 16, 2015 2:38 PM
To: Fullagar, Jill <Fullagar.Jill@epa.gov>
Subject: RE: Brian, Tanya R10 request for OA help

Or were all those lat longs from a single study?

From: Fullagar, Jill
Sent: Monday, November 16, 2015 2:36 PM
To: Jacobson, Martin
Subject: RE: Brian, Tanya R10 request for OA help

Really? Interesting. Thanks for checking. I'll need to follow up with the author. Thank you!!!

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From: Jacobson, Martin
Sent: Monday, November 16, 2015 2:29 PM
To: Fullagar, Jill <Fullagar.Jill@epa.gov>
Subject: RE: Brian, Tanya R10 request for OA help

Hey Jill,

None of the listed coordinates are within 3 miles of the Washington or Oregon coast.

Marty

From: Fullagar, Jill
Sent: Monday, November 16, 2015 11:01 AM
To: Jacobson, Martin
Subject: FW: Brian, Tanya R10 request for OA help

Hi Marty,

The lats and longs are in a table below. If you could figure out if they are in state waters, and if they are WA or OR, that would be great. Some are likely CA. I don't think any are AK, but if they are, please note that as well. Thank you!!!

jill

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From: Rappoli, Brian
Sent: Monday, November 16, 2015 8:59 AM
To: Fullagar, Jill <Fullagar.Jill@epa.gov>; Furtak, Sarah <Furtak.Sarah@epa.gov>
Cc: Code, Tanya <Code.Tanya@epa.gov>; Monschein, Eric <Monschein.Eric@epa.gov>
Subject: FW: Brian, Tanya R10 request for OA help

Jill and Sarah

Here are my initial thoughts on the papers submitted by CBD:

Shell Condition and Survival of Puget Sound Pteropods Are Impaired by Ocean Acidification Conditions (Busch et al, 2014)

Deliberative Process / Ex. 5

The Pacific oyster, Crassostrea gigas, shows negative correlation to naturally elevated carbon dioxide levels (Hales et al, 2012)

Deliberative Process / Ex. 5

Persistent carry-over effects of planktonic exposure to ocean acidification in the Olympia oyster (Hettinger et al, 2012)

Deliberative Process / Ex. 5

Potential impacts of ocean acidification on the Puget Sound food web (Busch et al, 2013)

Deliberative Process / Ex. 5

Ocean Acidification Has Multiple Modes of Action on Bivalve Larvae (Waldbusser et al, 2015)

Deliberative Process / Ex. 5

Limacina helicina shell dissolution as an indicator of declining habitat suitability (Bednarsek et al, 2014)
My questions is whether the data is from state waters. Do you have GIS software that can determine if the sites are in state waters? Here is the supplementary data for sampling locations.

Table S1. The position and depth of samples containing *Limacina helicina helicina* f. *pacifica* collected with a 333 µm mesh vertical Bongo net over the vertically integrated depth of 100 m at the investigated stations, along with depth-integrated abundance (ind m^{-2}), shell size range (mm), life stage in the fraction of the undersaturated ($\Omega<1$) water. For dissolution analyses, samples size (N) and the proportion of severe (Type II and Type III) dissolution are provided.

station No.	lat	long	sampling depth (m)	fraction of water ($\Omega<1$) (upper 100 m)	depth-integrated abundance (ind m^{-2})	shell size range (mm)	life stage J=juvenile, SA=subadult	sample size (N)	severe shell dissolution (proportion)
6	48.377	124.972	0-100	83.0	19	0.5-2	J, SA	7	0.57
13	47.113	-124.637	0-100	77.6	68	0.5-2	J, SA	5	0.60
14	47.113	-124.350	0-100	40.0	86	0.5-2	J, SA	9	0.67
15	46.126	-124.095	0-100	83.3	102	0.5-2	J, SA	3	1.00

21	46.125	-125.732	0-100	0.0	104	1-2.5	J, SA	4	0.25
28	44.646	-124.289	0-100	82.9	77	0.5-2	J, SA	12	0.75
29	44.633	-124.400	0-100	65.1	122	0.5-2	J, SA	4	0.75
31	44.633	-124.833	0-100	40.1	252	1-2.5	J, SA	4	0.25
37	44.200	-124.975	0-100	31.0	134	1-2.5	J, SA	3	0.33
57	40.246	-124.384	0-100	15.2	389	0.5-2	J, SA	7	0.29
61	40.103	-124.711	0-100	12.0	445	0.5-2	J	12	0.33
65	38.300	-123.100	0-100	52.6	14267	0.5-1	J	5	0.60
69	37.762	-123.274	0-100	13.0	700	0.5-2	J, SA	4	0.25
73	36.668	125.646	0-100	0.0	6	0.5-2	J, SA	4	0
75	36.524	-122.434	0-100	30.0	15	0.5-1	J	4	0.25
87	34.433	120.432	0-100	0.0	1	0.5-1	J	4	0
95	33.488	117.755	0-100	0.0	15	0.5-2	J, SA	4	0

If some of the data is from state waters, then we should discuss.

Hope this helps,
Brian

From: Furtak, Sarah
Sent: Tuesday, November 10, 2015 5:15 PM
To: Rappoli, Brian <Rappoli.Brian@epa.gov>; Code, Tanya <Code.Tanya@epa.gov>
Subject: Brian, Tanya R10 request for OA help

Brian and Tanya,
Jill offered for you to contact Jill directly with any questions if you'd prefer that approach. Alternatively, I'm happy to aggregate questions on the articles that you send to me. Either way, I will plan to check in with you on Nov. 17.
Sarah

From: Furtak, Sarah
Sent: Tuesday, November 10, 2015 2:39 PM
To: Rappoli, Brian <Rappoli.Brian@epa.gov>; Code, Tanya <Code.Tanya@epa.gov>
Cc: Chemerys, Ruth <Chemerys.Ruth@epa.gov>
Subject: Brian, Tanya R10 request for OA help

Hi Brian and Tanya,
Per our discussion, attached are the articles from Jill in Region 10. I understand these were cited by Ctr. For Biological Diversity (CBD), and Jill has reached out to us – Ruth, Chris, Jamie, myself (along with Jill's WQS and ORD counterparts)

for input as to whether the articles show an impairment of either of the state narrative criteria immediately below. I understand the first and second articles are those that Jill feels are the highest priority for our review.

My target for providing aggregate input to Jill is Nov. 20. I will plan to check in with you Nov. 17 on progress of your review. Does Nov. 17 sound like a reasonable target for your review?

If you have any specific questions on the articles, please plan to capture those for Jill.

Oregon Statewide Narrative Criteria (OAR 340-41-007). The relevant narrative criteria are as follows:

"(1) Notwithstanding the water quality standards contained in this Division, the highest and best practicable treatment and/or control of wastes, activities, and flows must in every case be provided so as to maintain dissolved oxygen and overall water quality at the highest possible levels and water temperatures, coliform bacteria concentrations, dissolved chemical substances, toxic materials, radioactivity, turbidities, color, odor, and other deleterious factors at the lowest possible levels.

(11) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish may not be allowed;

WA Aquatic Life Narrative **WAC 173-201A-260**

Natural conditions and other water quality criteria and applications.

(2) **Toxics and aesthetics criteria.** The following narrative criteria apply to all existing and designated uses for fresh and marine water:

(a) Toxic, radioactive, or deleterious material concentrations must be below those which have the potential, either singularly or cumulatively, to adversely affect characteristic water uses, cause acute or chronic conditions to the most sensitive biota dependent upon those waters, or adversely affect public health (see WAC 173-201A-240, toxic substances, and 173-201A-250, radioactive substances).

Thanks!

Sarah
Sarah Furtak
U.S. Environmental Protection Agency
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Assessment and Watershed Protection Division
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From: Chemerys, Ruth
Sent: Tuesday, November 03, 2015 8:26 AM

To: Furtak, Sarah <Furtak.Sarah@epa.gov>
Subject: FW: Could use some OA help

Sarah-

Keeping you in the loop as well….I won't have time to review before I leave for my trip tomorrow, but would have time next week…

From: Fullagar, Jill
Sent: Monday, November 02, 2015 4:29 PM
To: Brown, Cheryl A. <Brown.Cheryl@epa.gov>; Labiosa, Rochelle <labiosa.rochelle@epa.gov>; Chemerys, Ruth <Chemerys.Ruth@epa.gov>; Fowler, Jamie <Fowler.Jamie@epa.gov>; Lewicki, Chris <Lewicki.Chris@epa.gov>
Subject: Could use some OA help

Hi all,

The time has come when I could use a second opinion on some OA articles. If you could take a look and let me know if you think any of the above show an impairment of either of the state narrative criteria listed below, I would really appreciate it. I think the most potentially relevant articles are the first two attached above, so if you have limited time, just take a look at those two, if you can. Thank you so much, and let me know if you have questions.

jill

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(11) The creation of tastes or odors or toxic or other conditions that are deleterious to fish or other aquatic life or affect the potability of drinking water or the palatability of fish or shellfish may not be allowed;

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